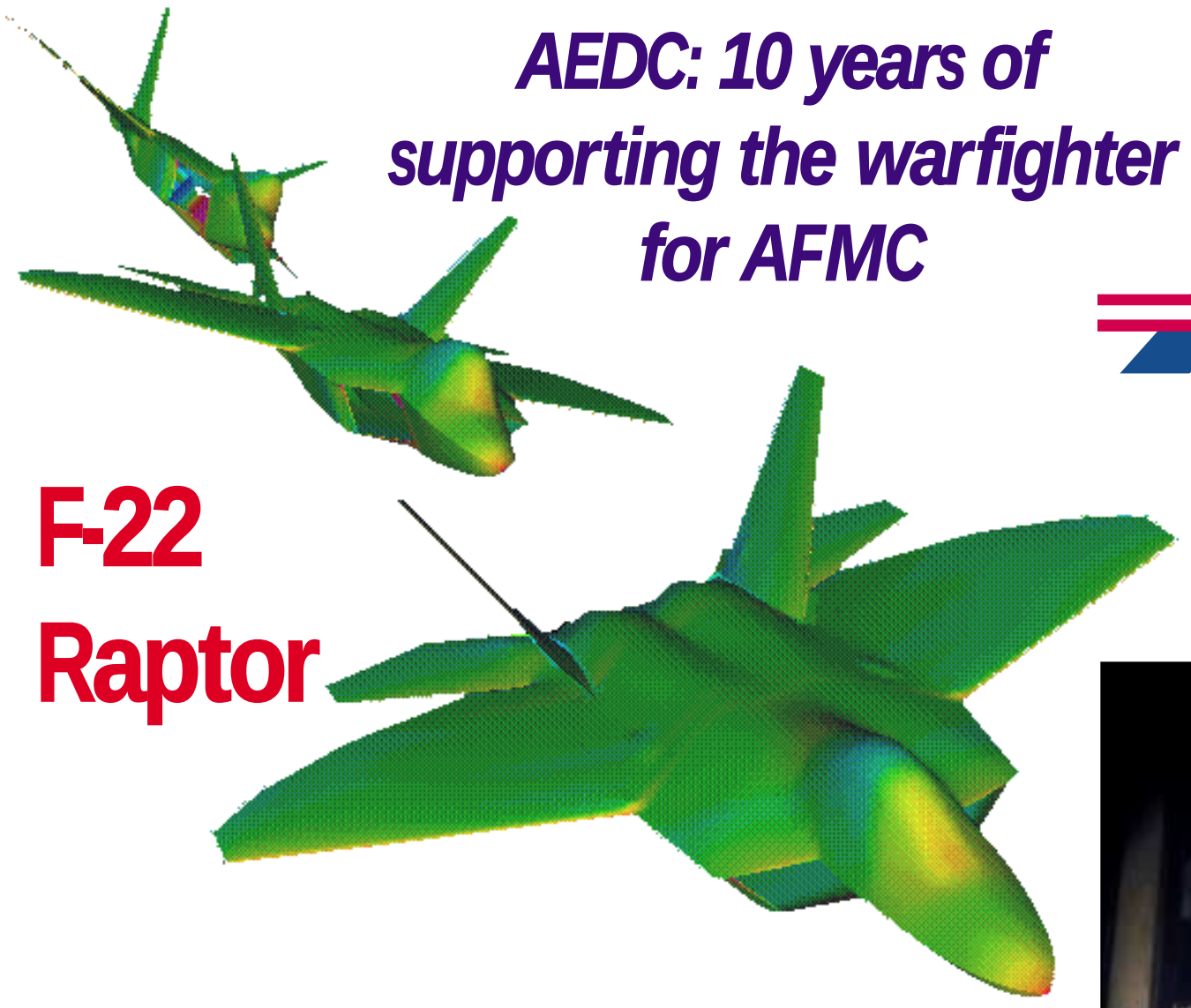
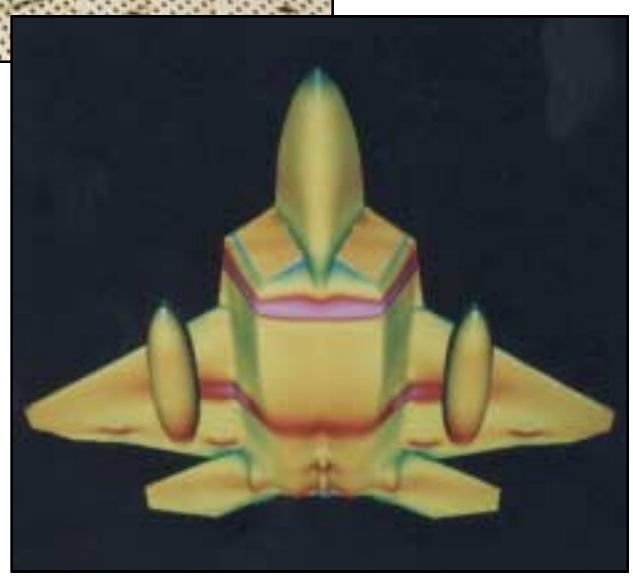
AEDC: 10 years of supporting the warfighter for AFMC



F-22 Raptor



F-22 Raptor

Top left, a rolling F-22 test performed with Computational Fluid Dynamics. Above, the Raptor's powerplant, the Pratt & Whitney F119 undergoes testing in 1989. At left, AEDC engineers used CFD again in 1993 to determine the flow fields around the Raptor, shown here carrying external fuel tanks. Middle left above, a scale model of the F-22 undergoes wind tunnel testing in 1992.

B-2 Spirit Bomber

1994: Right, this B-2 aircraft model undergoes bomb seperation in the center's 16-foot transonic wind tunnel.

With a decade under its wing, Air Force Materiel Command is cel ebrating 10 years of support to America's warfighters.

Since its dedication July 1, 1992, AEDC has been part of AFMC headquartered at Wright -Patterson AFB, Ohio.

The command is based on the concept of Integrated Weapons System Management. This concept enables one command to provide "cradle-to-grave" development and support for weapon systems and gives Air Force operational commands a single source of expertise and support for their aerospace systems.

AFMC is responsible for weapon systems such as aircraft, missiles and space craft that are developed and acquired through AFMC's product centers, using science and technologies developed at their affiliated laboratories. The systems are then tested at the command's test centers and are serviced, overhauled and modified at its air logistics centers. At the end of their service lives, aircraft are retired to AFMC's storage and reclamation facility in Arizona.

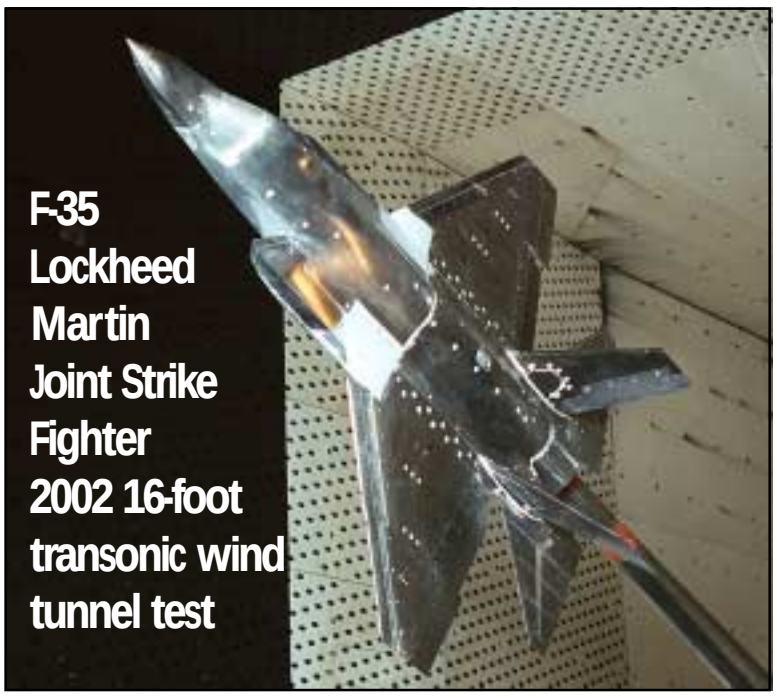
AFMC also provides support to other U.S. military services and allies in addition to its responsibility of handling major aerospace projects for the DoD.

AEDC has provided 10 years of testing the latest warfighters such as the Air Force's F-22 Raptor and its engine, a Pratt & Whitney F119.

The center is providing support for the new F-35, Joint Strike Fighter. Both Lockheed Martin and Boeing tested their versions of the fighter demonstrator at AEDC. Pratt & Whitney also tested both demonstrator engines for the fighters, an F119 variant. More testing is scheduled for the new program.

The Air Force's Global Hawk and Unmanned Combat Air Vehicle have also used AEDC's latest technology for test before flight including the Pressure Sensitive Paint technology for the Global Hawk.

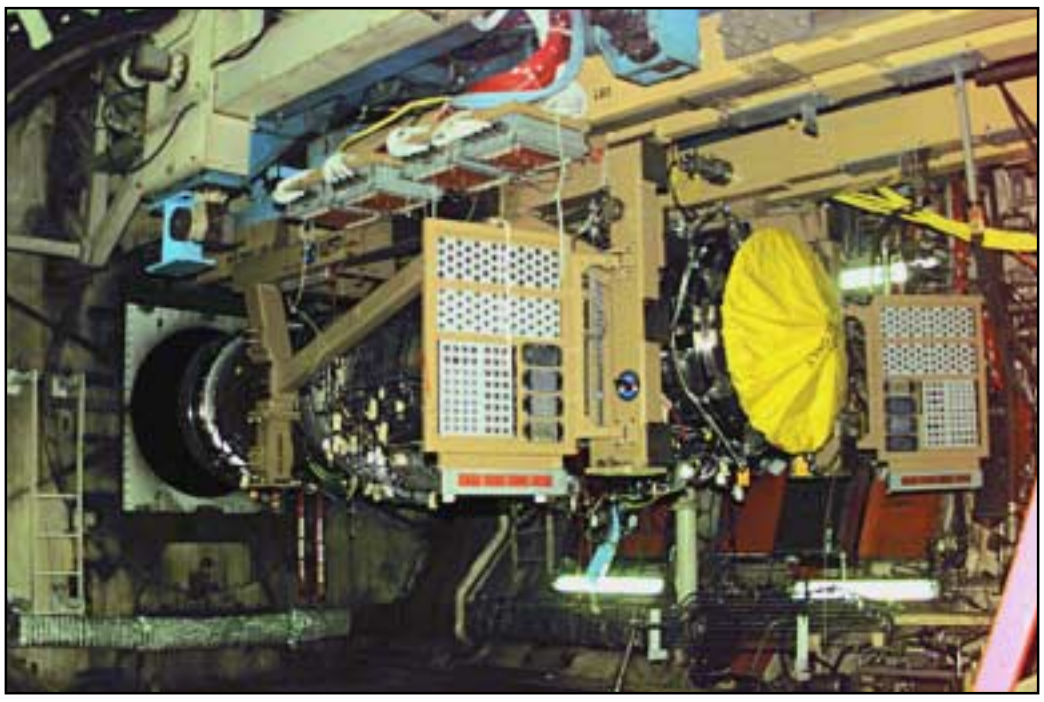
More recently, the B-2 Spirit bomber underwent store separation testing to validate conventional weapons in the center's Propulsion Wind Tunnel facility.



F-35 Lockheed Martin Joint Strike Fighter 2002 16-foot transonic wind tunnel test

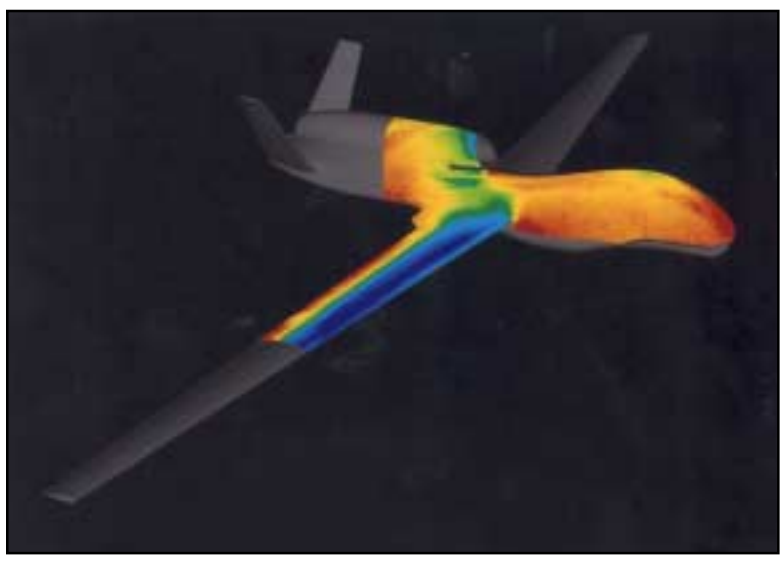
UCAV

2000: Above, AEDC engineer David Hughes examines a 1/10-scale model fo the Unmanned Combat Air Vehicle (UCAV) in the center's four-foot transonic wind tunnel. ÅEDC testers obtained data during tests for several weapon types envisioned for use on the UCAVs.



F135 JSF engine

1999: Above, Pratt & Whitney's JSF F119 derivative engines underwent more than 1,400 hours of testing in AEDC's Propulsion Test Cells J-2. This engine is now the powerplant for the F-35 Joint Strike Fighter.



Global Hawk

1997: Above, Pressure Sensitive pain technology was used to give Teledyne Ryan Aeronautical detailed surface pressure distribution for the Global Hawk, then the DoD's newest unmanned reconnaissance aircraft. 1996: Right, a scale model of the Global Hawk was tested in AEDC's 16-foot transonic wind tunnel.